

B-40

GUIDE TO YOUR YAMAHA ELECTONE

Welcome to the YAMAHA world of music!

We, YAMAHA, wish to thank you for selecting the Electone Organ B-40.

We feel sure that you will realize many happy years of playing enjoyment with this instrument.

Please read this manual carefully to be sure you are familiar with each of the Electone Organ's features and their expressive possibilities. In that way you and your Electone Organ can become lifelong partners in musical creativity.

Contents

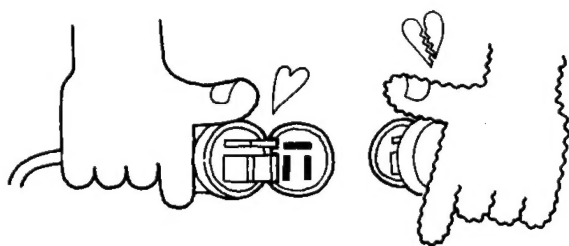
	Page
Read the following before playing	1
This is the B-40	2
Keyboards	3
Tone Levers, Upper Preset Tones (ORGAN PRESET ENSEMBLE)	4
Vibrato, (DEPTH, DELAY VIBRATO), Reverb Glide, Manual Balance, Pedal Sustain, Expression	
Pedal, Master Volume	5
Tremolo	6
Auto Rhythm Section	7
Auto Bass/Chord Fun Blocks	9
Bass Variation	11
To Fully Enjoy Your Electone	12
Electone is not out of order if	13
Specifications	15

Read the following before playing

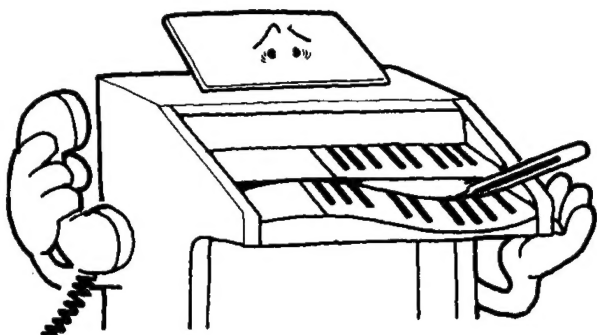
In general, treat your Electone with the same care you would any fine musical instrument. The following points are suggested for optimum enjoyment.

1. Use only proper line voltage. Consult your Yamaha serviceman for changes.

As to British-Standard Model, its information is in 'Specifications' on the last page.

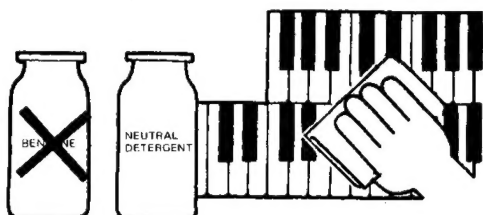


2. Never touch the inside parts yourself.

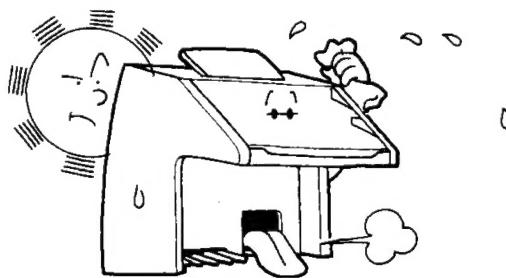


3. Always shut off the power after playing.

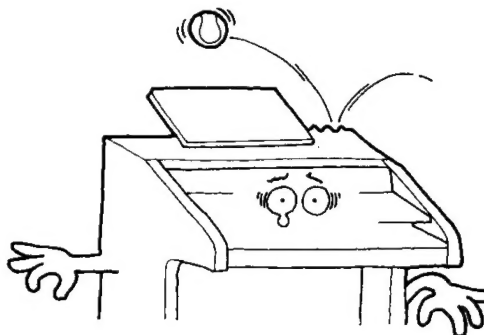
4. Clean keys, etc., with a damp cloth only. Never use solvents such as benzene; they will damage the finish.



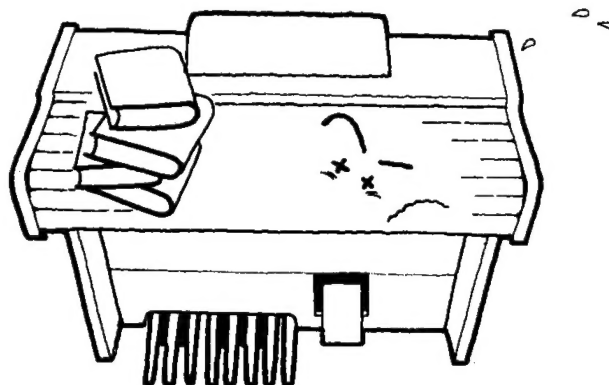
5. Shield the cabinet from direct sunlight, humidity and heat to protect the finish and joints.



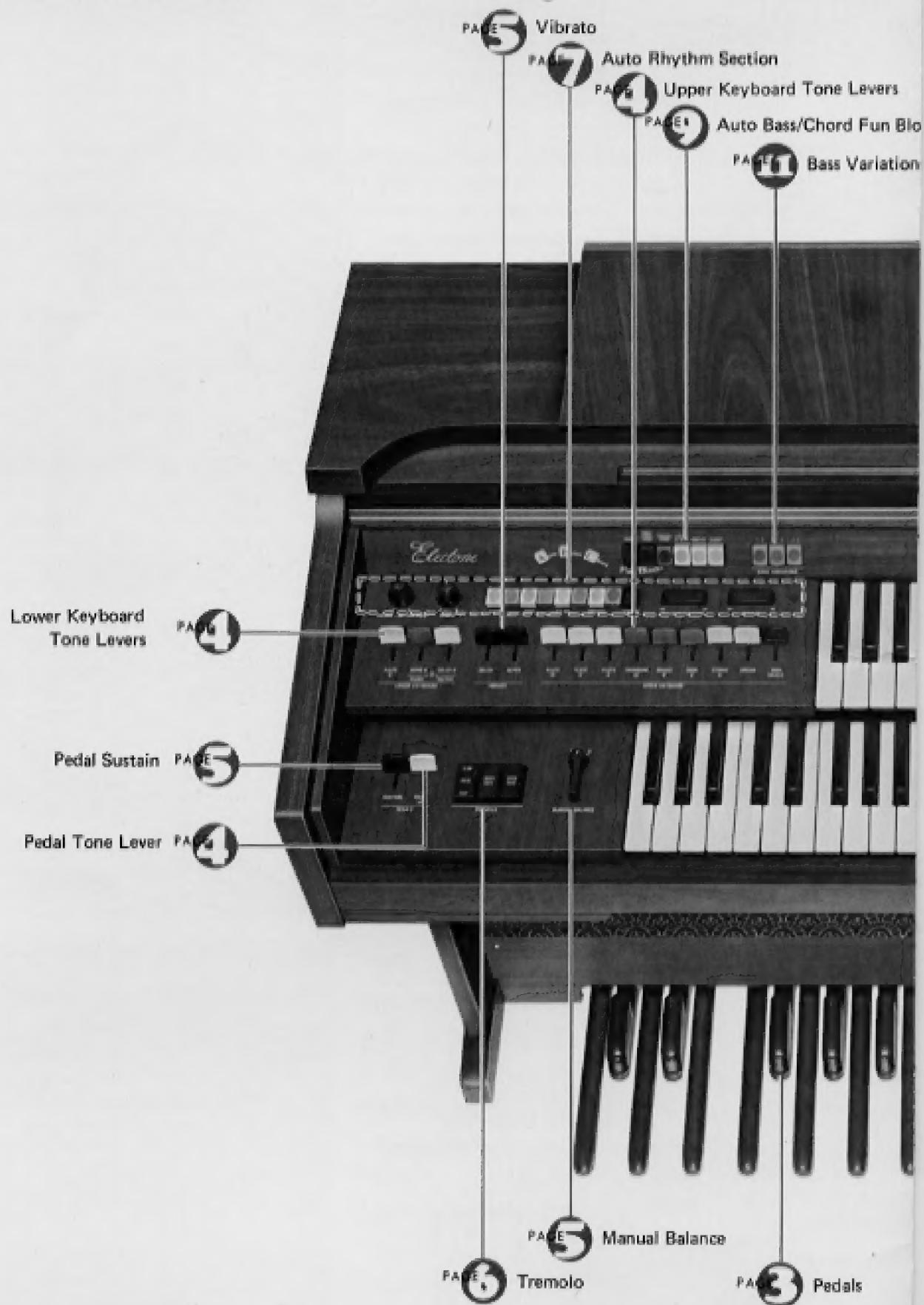
6. Do not hit or scratch the cabinet with a hard object.



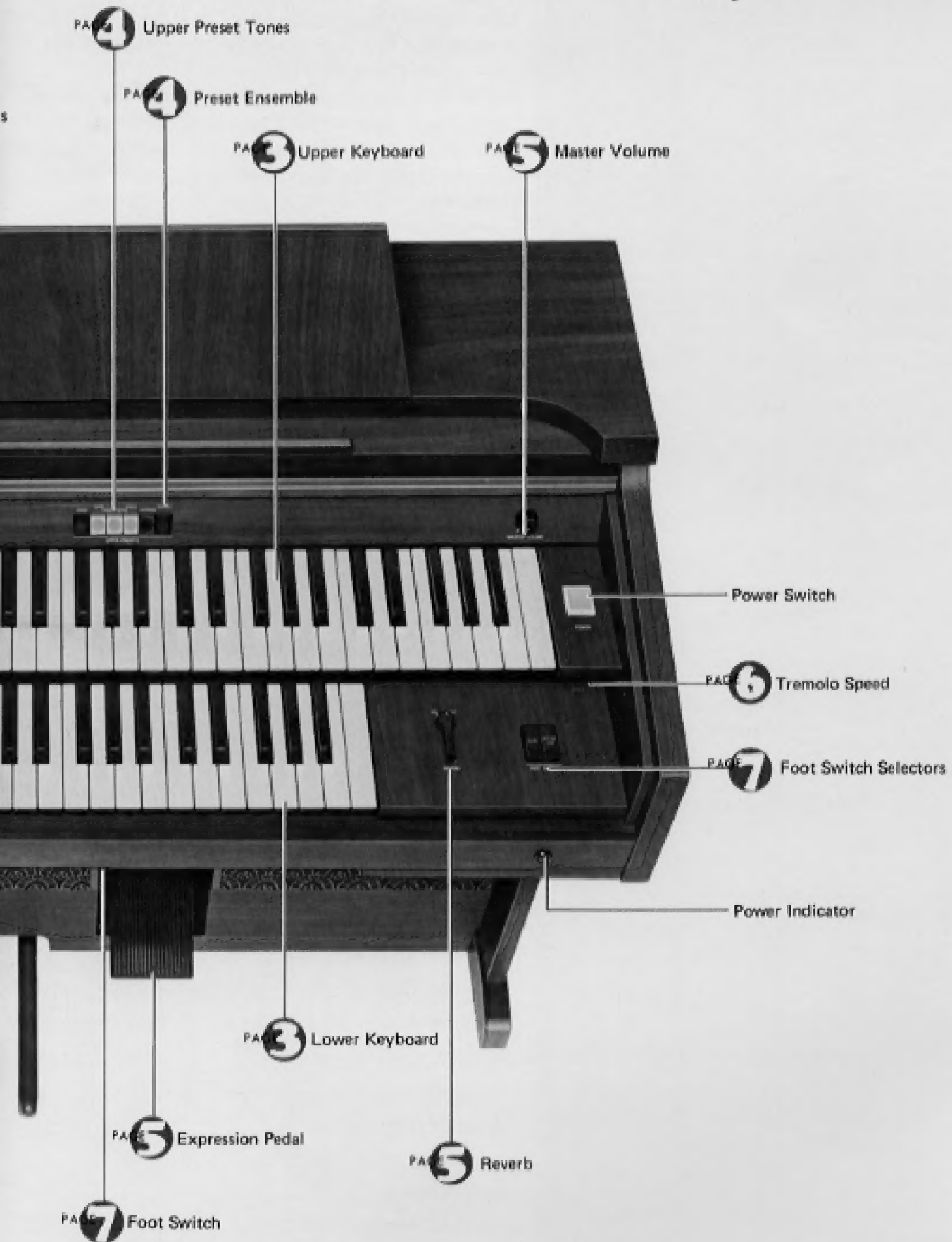
7. To open or close the fallboard grasp the front lip with both hands and slide gently. Never pull directly upwards. Do not place anything heavy on the fallboard.



This is the B-40



While reading the manual, keep this page open for reference.



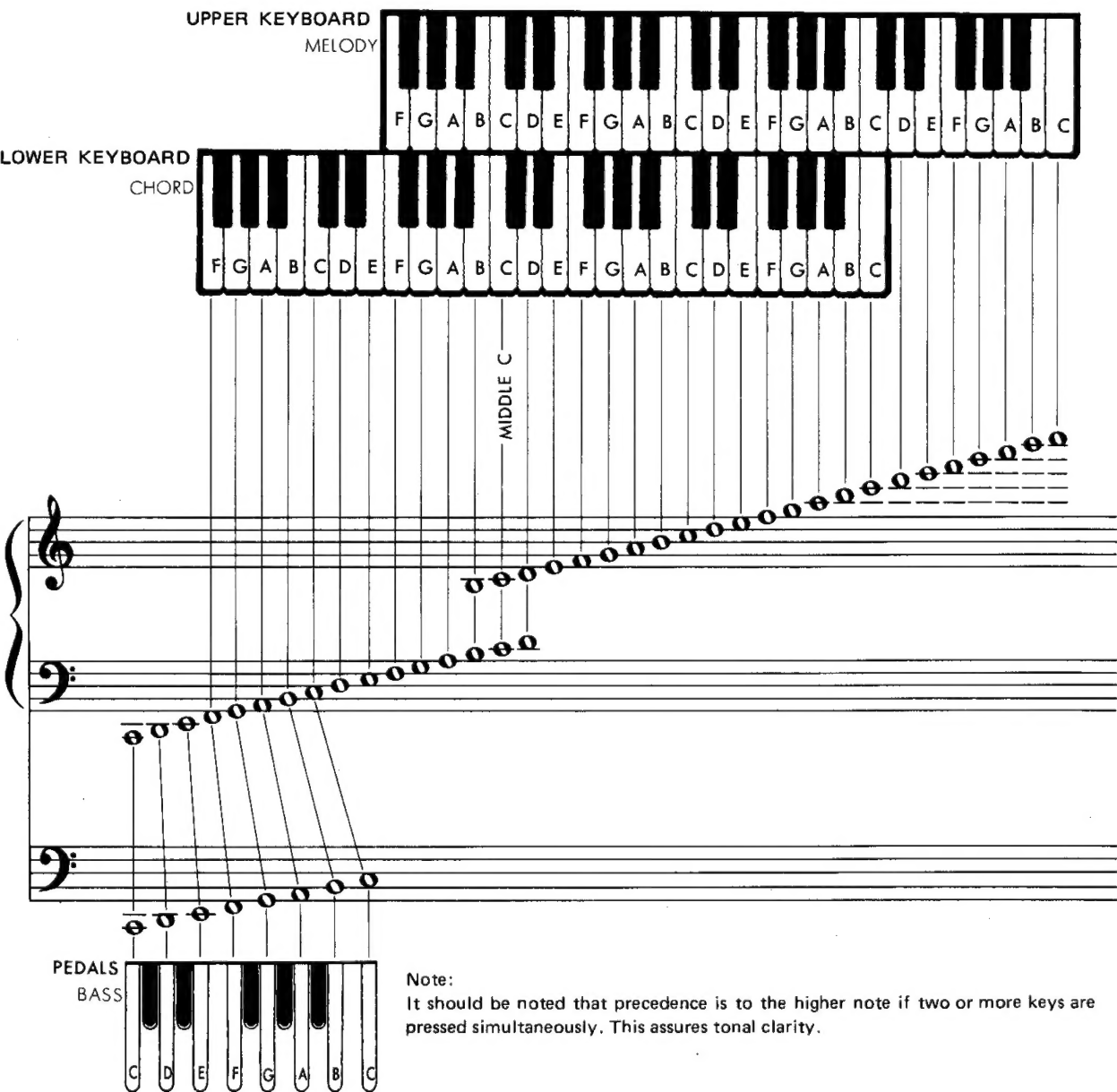
Keyboards

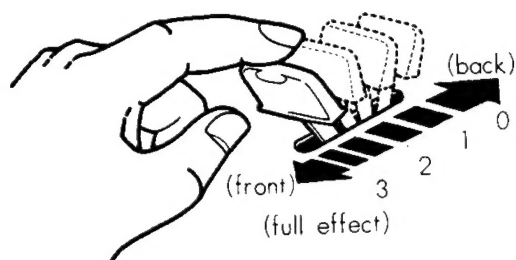
This Electone has three keyboards. They have keys and octaves as follows:

Upper Keyboard	44 keys (3 $\frac{2}{3}$ octaves)
Lower Keyboard	44 keys (3 $\frac{2}{3}$ octaves)
Pedals	13 keys (1 octave)

This Electone is designed to permit playing the melody on the upper keyboard with the right hand, the chords on the lower keyboard with the left hand, and bass notes on the pedals with the left foot.

All keys are arranged in the keyboard method layout shown below. Each white key has a name (from C to B), and the blacks are sharps or flats.



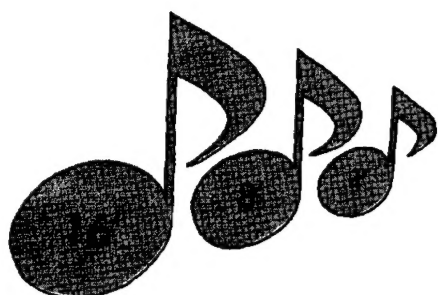


Tone Levers

To the left of the upper and lower keyboard are series of tone levers which control the Electone voices that will sound when the keys are depressed. They are divided into groups for upper, lower and pedals, so that different registrations can be set for each.

Upper Keyboard's Levers	9 voices
Lower Keyboard's Levers	3 voices
Pedal Lever	1 voice

Each lever provides two methods of control. One is by continuously moving the lever from off to full, to achieve the exact setting for that tone, and thus balancing the overall tone setting with perfect precision. Each lever also has two easy-to-feel click stops, at 1/3 and 2/3 positions. This lets you refind any setting with mathematical precision and no guesswork in a matter of seconds.



PITCHES OR FOOTAGES

The B-40 has three different pitch levels, indicated by the numbers 16', 8' and 4'. These are standard organ abbreviations showing the tone's pitch in relation to the fundamental (written note). An 8' tone will sound just as it has been written. A 16' tone will provide a tone exactly one octave lower than the written note. Similarly, 4' tones are one octave higher than the written note.

Upper Preset Tones

On the panel above the upper keyboard are six Upper Preset Tone selectors (four tones plus Cancel and Organ Preset Ensemble). These on/off switches are special tonal blends that most closely resemble the instruments they are named (Accordion, Piano, Country Guitar, Banjo).

Since these buttons are factory preset, they automatically cancel all other upper keyboard's tone lever settings. This lets you switch back and forth. In addition, precedence is to the right. This means that if two or more buttons are pressed, the one to the right will take effect. To switch from one button to another it is not necessary to first press the cancel button.

Note: Upper Sustain control lever does not work with the Accordion, Piano, Country Guitar and Banjo preset selectors.

ORGAN PRESET ENSEMBLE

This push button controls the effect which adds the upper tone lever to the upper preset tone (Accordion, Piano, Country Guitar, Banjo).





Vibrato

Vibrato is a waving of the tone. You will see violin and cello players use it freely by an oscillating motion of the left hand. It increases the emotional quality of the violin tone.

DEPTH

The Vibrato effect is obtainable by moving the lever close to you.

It provides continuous adjustment of the vibrato depth.

DELAY VIBRATO (Upper Keyboard)

When this lever is turned on, the vibrato will gradually introduce itself, a few moments after the key is pressed.

Reverb

The reverberation effect, which makes your playing sound full and rich as if you were playing in a large hall, can be adjusted continuously and smoothly to suit your taste.

Glide (FOOT SWITCH SELECTORS)

While the foot switch is pushed when the Glide selector is on, pitch will be lowered one half tone.

Manual Balance

This control governs the relative strength of the upper and lower keyboards. It is normally left in the center position, but can be shifted to stress the melody or accompaniment in a selection or passage.

This control can also be used to compensate for a higher number of total tone lever settings (which would ordinarily result in higher volume) on one of the two keyboards.

Pedal Sustain

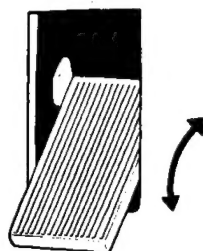
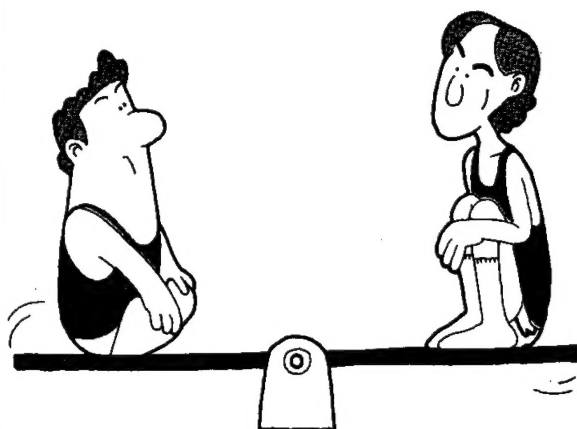
This control provides continuous adjustment of the sustain effect on the pedals and allows the pedal note to continue to sound a few seconds after you have released it.

Expression Pedal

Affects the emotional mood of every passage by letting you vary the volume continuously with your right foot. Works within the range set by the master volume control.

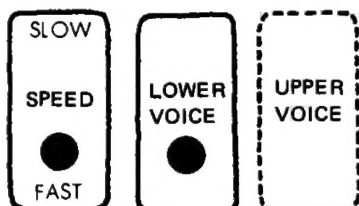
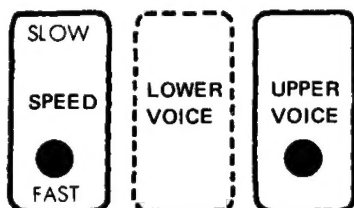
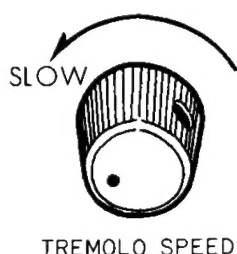
Master Volume

The master volume control adjusts the overall volume of the whole organ function, including the Electone voices and rhythm section voices.



Expression Pedal

Tremolo



Successfully incorporating the essential sound quality of the Yamaha rotary speaker, this new effect is achieved solely through special electronic circuitry, adding full, rich musical expression to your music.

Electronic Tremolo is available in two speeds. Use **SLOW** for stately, liturgical selections, **FAST** for popular numbers. Works on Upper, Lower or both Keyboards, according to which of the three tablets you choose.

The Tremolo is complemented by a continuous tremolo speed control knob.

UPPER VOICE

Use this tablet to apply the Tremolo to the upper keyboard's tones.

LOWER VOICE

Use this selector to apply the Electronic Tremolo to the lower keyboard's tones. The use of upper and lower tablets together will apply the Tremolo to the whole organ.

SPEED

Combined with either or both of the above tablets, this tablet determines the speed of the Tremolo. Set on **FAST** for (tremolo effect), **SLOW** for (chorus effect).

Auto Rhythm Section



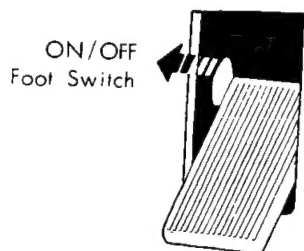
This section provides 8 catchy rhythms, each one produced by a simple button. You can also create more rhythm variations with the variation button. In addition to a combined volume and balance knob, tempo control and tempo indicator light, there are two other switches: ordinary Start and the Yamaha Synchro-Start which begins the rhythm accompaniment on the first beat of a measure, when the first lower keyboard or pedal note is depressed. The special expression pedal foot switch lets you cut and restart the rhythm at any point during play.

RHYTHM START

For instant rhythm at the beginning of a selection, push the rhythm selector desired, then flick the Start switch on.

SYNCHRO-START

Select the rhythm switch on the Synchro-Start and begin to play once you have the beat established. The rhythm will begin as soon as you strike a lower keyboard or pedal note. This switch permits you to lead in with a rhythm free melody at first if so desired. You can switch off the Auto Rhythm with the foot switch. When you wish to continue hearing the Auto Rhythm, be sure to switch on with the foot switch.

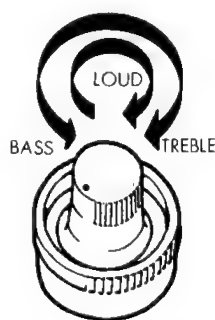


Expression Pedal

RHYTHM STOP (FOOT SWITCH SELECTORS)

This tablet activates a click-switch located at the left side of the expression pedal. When the tablet is on and the rhythm section operating, touch the foot switch once and the rhythm automatically stops. Touch it again to switch back on.

Note: The tablet controls the foot switch. If the rhythm has been cut by the switch and one of the rhythm start switches is still on, cancelling the tablet will erase the effect of the foot switch -- in other words, the rhythm will go back on again.



TEMPO

The tempo of the Auto Rhythm section can be adjusted by a continuous control knob. This is best accomplished by turning on the Synchro-Start switch.

Although no sound will be produced, the indicator lamp will flash each quarter note, letting you visually check the tempo while you adjust.

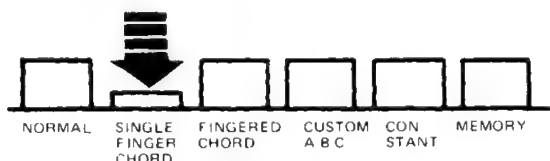
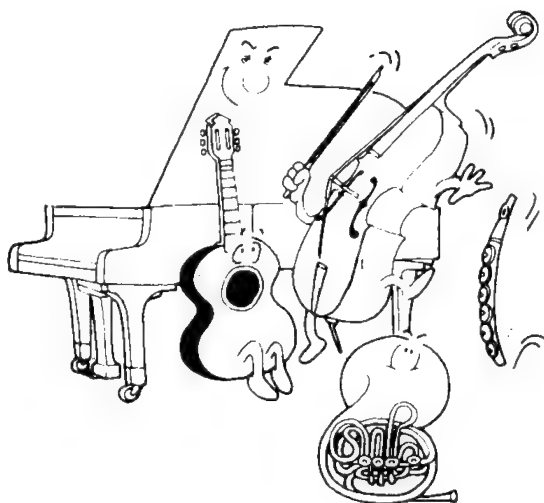
BALANCE

This control lets you balance the low rhythm sounds, such as drums, and the high sounds (i.e., cymbals) according to your mood and the selection. It can make a big difference even when using the same rhythm. Turn the knob to the right to accentuate the higher (treble) sounds, to the left for lower (bass). If you accentuate the treble sounds the rhythm becomes brighter. Check the playing hints for specific settings.

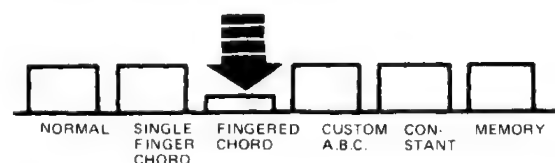
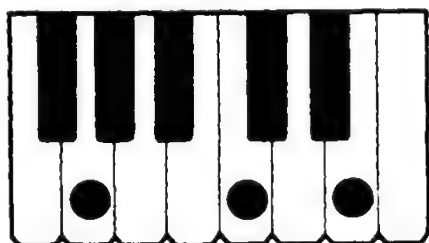
VOLUME

Use it to balance the volume of the rhythm section and the manuals. This volume is then varied during the playing by the expression pedal, just like that of the other tones.

Auto Bass/Chord Fun Blocks



C Major chord



This Electone is equipped with a "Fun Block" section of six buttons which can be used in conjunction with the Auto Rhythm section (see P. 7). It enables you to play a variety of alternating bass and chord rhythms, simply by holding down either a single key or a chord of lower keyboard, according to which fun block button you press. From your very first keyboard attempt, the fun block feature will let you sound like a pro, making full rhythmic use of the lower keyboard and pedals. Here is how it works.

Note: When the Auto Bass/Chord section is used, the tone color of the lower keyboard's voices will change from Horn 8' to Piano and from Cello 8' to Guitar.

SINGLE FINGER CHORD

- Set the tone levers for the tones you want on the lower Keyboard (both Piano and Guitar sounds are available); use one or more levers to adjust the Auto Bass Chord tone color and volume in the normal way.
- Match the setting of the Pedal tone lever to the lower keyboard's tones.
- Select a rhythm pattern and push the corresponding button until it clicks and stays down.
- Set the Rhythm Start switch on.
- Adjust the rhythm tempo and volume.
- Push the Single Finger Chord button.

Now, if you press a C key on the lower keyboard, a C major chord will play in an alternating pattern which matches the rhythm pattern and tempo set.

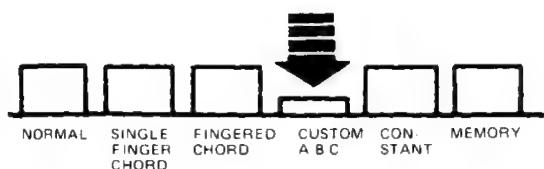
As long as the key is held down, the bass chord rhythm continues. When the Black-key pedal is pressed, the chord changes from major to minor, and when released, the chord returns to major. When the White-key pedal is pressed, the chord changes from major to seventh, and when released, the chord returns to major. When both Black- and White-key pedals are pressed, a minor seventh results.

Note: The bass note will play the root and fifth of any chord pressed, except when the Jazz Rock rhythm is used; in that case the bass sounds the root only.

FINGERED CHORD

- Select the rhythm and set both its tempo and volume as explained earlier.
- Depress the Fingered Chord button.
- Play a desired chord (major, minor, seventh, minor-seventh) on the lower keyboard.

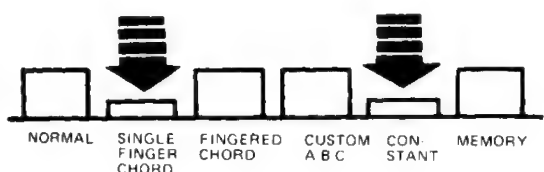
Now as long as you hold that chord it will play according to the rhythm and tempo you have set, along with the proper pedal notes.



CUSTOM A.B.C.

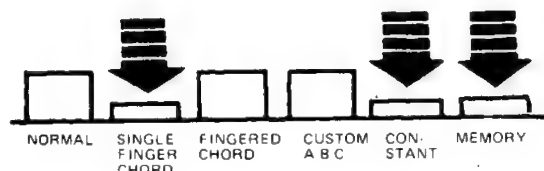
- Push a rhythm button you prefer and set both tempo and volume as explained earlier.
- Push the Custom A.B.C. button, and any lower Keyboard "Piano/Guitar" or pedal notes depressed will play the preselected pattern of the Auto-Rhythm.

Note: Bass sound depends on pedal key, while chord on Lower key.



CONSTANT

- Select the Rhythm and set the tempo and volume as explained above.
- Push the Constant button and either Single Finger Chord or the Fingered Chord button.
- Press the desired key or chord on the Lower Keyboard. As long as the keys are held down, the chord, as well as a pedal note will sound as if they were held down during normal play without any rhythm pattern. As soon as the keys are released the chord stops.



MEMORY

This feature permits chords and or pedal notes to continue to play after the pedal or chord has been released. The Memory Fun Block will function with the Single Finger, Custom A.B.C. and Constant Fun Blocks, as illustrated.

Constant/Single Finger/Memory

Bass and Chord will play continuously with or without Auto Rhythm.

Single Finger/Memory

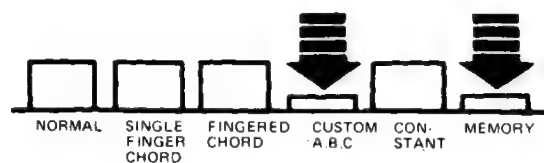
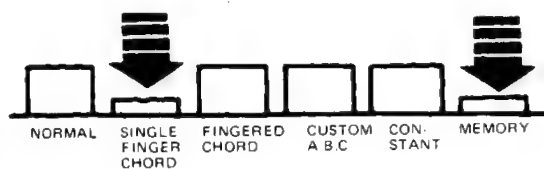
Bass and Chord will alternate continuously, according to your preselected Rhythm pattern, until another Single Finger Chord is selected.

Custom A.B.C./Memory or Fingered Chord/Memory

This feature permits the Pedal note to continue to alternate in Rhythm after you have released the pedal or chord, until another pedal key or chord is selected.

This enables you to expand the capabilities of the Fun Block system to your Harmonic tastes in Pedal and Chord construction.

Note: Custom A.B.C./Constant/Memory or Fingered Chord/Constant/Memory . . . Bass will play continuously with or without Auto Rhythm, until another pedal key or chord is selected.



NORMAL

This button cancels the other Fun Blocks, returning the lower keyboard and the pedals to conventional playing functions.

Note: The Flute voices on the lower keyboard are not affected by the "Auto Rhythm" rhythm pattern. If it is set on it will sound continuously for any key held down. Use it to soften the mood of the Auto Bass Chord accompaniment.

Bass Variations



1-5 1-3-5 1-7-5

The Electone B-40 lets you choose one of three bass patterns to match the lower keyboard's harmony. When the Single Finger Chord button is depressed, the three bass variations are created, just as when the Fingered Chord button is depressed.

Note: This bass variation works with Rhumba and Slow Rock beats. If the Rhythm Variation button is pressed, however, then bass variation will be available with Rhumba only.



1-5

This is the basic pattern; it alternates the root (1) and fifth (5) in the bass regardless of rhythm chosen or type of chord. The one exception is the Jazz Rock rhythm, which maintains root (1) pedal and no alternation.

Note: The Slow Rock and Jazz Rock rhythms play only the root (1), when the Rhythm Variation is switched on.



1-3-5

This selector effects the Slow Rock and Rhumba rhythms, with which it will play a root (1), third (3), and fifth (5) pattern. All other rhythms function as with the (1-5) selector.

Note: The Rhumba rhythm will play a root (1), third (3), and fifth (5) pattern, when the Rhythm Variation is switched on.



1-7-5

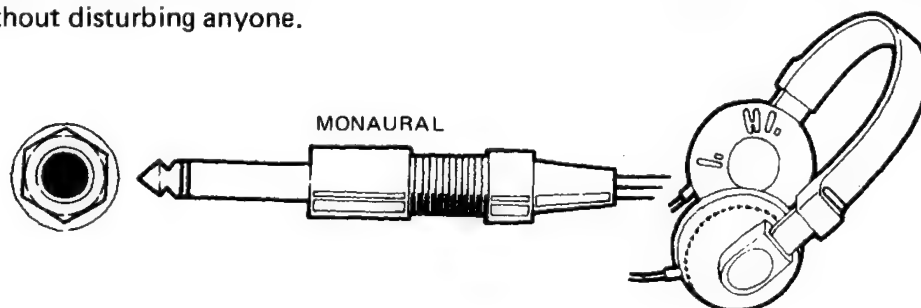
This selector effects the Slow Rock and Rhumba rhythms when a seventh or minor seventh chord is being played, with which you will hear the root (1), seventh (7), and fifth (5) bass notes. When playing a major or minor chord the unit will perform exactly as it does with the second Bass Variation selector (1-3-5).

Note: The Rhumba rhythm will play a root (1), seventh (7), and fifth (5) pattern, when the Rhythm Variation is switched on.

To Fully Enjoy Your Electone

HEADPHONES

A Yamaha headphones set (optional) can be plugged into the jack under the keyboard. With the headphones connected, the speakers are automatically shut off, allowing you to play or practice at any volume level without disturbing anyone.



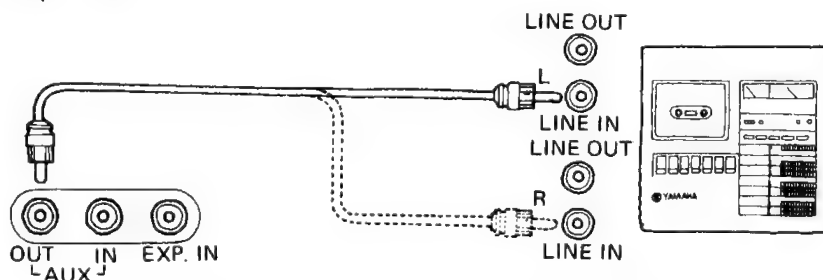
EXP. IN

This jack accepts any sound sources and reproduces them through this Electone's speakers.

Note: The volume of the sound source can be controlled by the expression pedal.

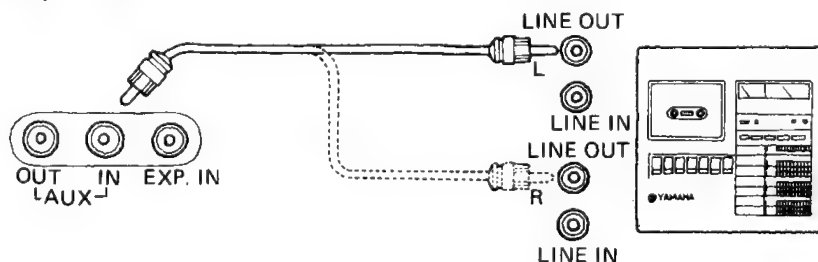
AUX OUT

For recording, connect the AUX OUT jack with the tape deck's LINE IN jack. Control the recording levels on the tape deck.



AUX IN

For playback, connect the AUX IN jack with the tape deck's LINE OUT jack. Control the playback levels on the tape deck.



Note: These sound sources (tape recorder etc.) are not affected by the expression pedal.

Electone is not out of order If...

1. the set does not go on when the power switch is turned on. Check the following.

Is the AC plug fully inserted into the electric wall outlet? Reinsert it to be sure. Is there power coming from that outlet?

If there is power in the outlet but the Electone does not play, unplug the cord and contact your Yamaha dealer. There are NO USER SERVICEABLE PARTS inside.

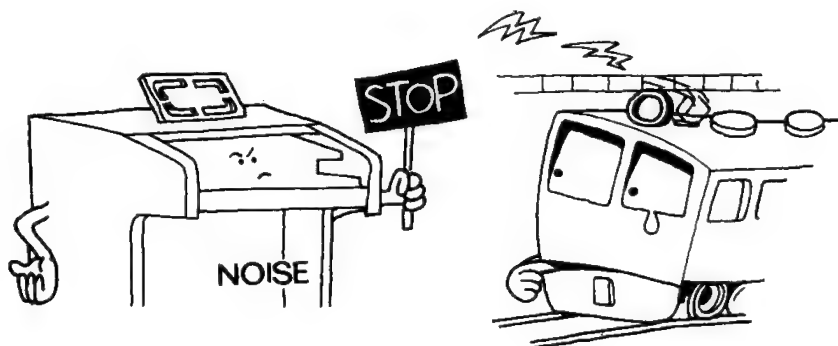
2. a sound should occur the instant you turn on the switch.

This merely indicates normal operation consequent on a surge of electricity in the main amplifier.

3. occasional unpleasant static occurs.

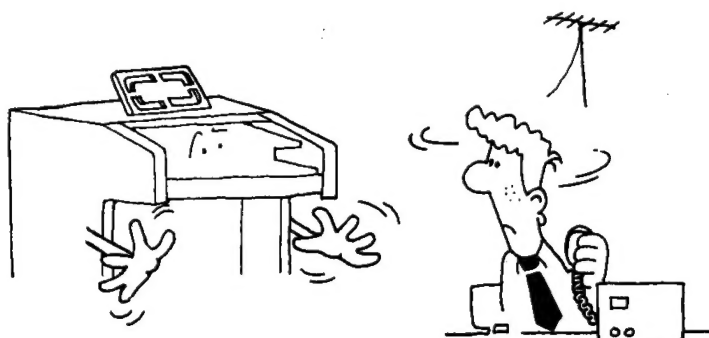
In the majority of such cases, the cause can be traced to the turning on or off of refrigerators, washing machines, electric pumps or other household appliances. Electrical faults in a neighboring outdoor neon sign may also be to blame.

If the cause is a fault in a neon or fluorescent lighting fixture, it should be repaired. When the cause is unknown, or in case of doubt, contact your Yamaha dealer.



4. the Electone reproduces radio or TV signals.

If there is a powerful transmitter such as a radio station in the vicinity this can occur. Contact your Yamaha dealer.



5. pedal note sound too high, upper keyboard's notes too low. This is especially noticeable when comparing the Electone with piano. Piano tones are combinations of harmonics and must interact with their surroundings, while Electone harmonics are simpler (multiples of the fundamental tone), requiring the Electone to be adjusted differently at the assembly stages.

6. rattling (sympathetic vibration) occurs.

All materials have critical resonance frequencies at which they vibrate. The Electone's continuous tones will naturally cause other objects (windows, shelves, etc.) to vibrate.



Specifications

KEYBOARDS

Upper	44 Keys f ~ c4 (3 $\frac{3}{4}$ octaves)
Lower	44 Keys F ~ c3 (3 $\frac{3}{4}$ octaves)
Pedals	13 Keys C1 ~ C (1 octave)

TONE LEVERS

Upper	Flute	16'
	Flute	8'
	Flute	4'
	Trombone	16'
	Brass	8'
	Oboe	8'
	String	8'
	Organ	
Lower	Wah-Brass	
	Flute	8'
	Horn 8' or Piano	
	Cello 8' or Guitar	
Pedals	Bass	16'

UPPER PRESET SELECTORS

Piano
Country Guitar
Banjo
Accordion
Organ Preset Ensemble
Cancel

EFFECT LEVERS

Vibrato Depth
Vibrato Delay (Upper)
Pedal Sustain

EFFECT CONTROLS

Reverb
Manual Balance

EFFECT SELECTOR

Glide (Foot Switch)

TREMOLO SELECTORS

Upper Voice
Lower Voice
Speed (Slow/Fast)

ABC FUN BLOCKS

ABC Selectors
Normal
Single Finger Chord
Fingered Chord
Custom A-B-C.
Constant
Memory

Bass Variation Selectors
1-5/1-3-5/1-7-5

AUTO RHYTHM SECTION

Rhythm Selectors

March Waltz
Swing Slow Rock
Jazz Rock Rhumba
Bossanova Samba
Variation

Rhythm Controls

Rhythm Start
Rhythm Synchro-Start
Rhythm Stop (Foot Switch)
Tempo
Volume
Tone Balance

Tempo Indicator

OTHER CONTROLS

Master Volume
Expression Pedal
Foot Effect Switch
Tremolo Speed Control
Power Switch

OTHER FITTINGS

Headphone Jack
EXP. IN Jack
AUX. IN/OUT Jack
Power Indicator
Roll-top Fallboard
Music Rest
Matching Bench

SPEAKERS

YAMAHA : 30 cm (12"), 5 cm (2")

CIRCUITRY

Solid State (Incl. LSIs and ICs)
Output Power : 30 Watts
Power Consumption : 80 Watts
Power Source : 50/60 Hz, AC

DIMENSIONS

Width : 113 cm (44 $\frac{3}{4}$ ")
Depth : 58 cm (22 $\frac{3}{4}$ ")
Height : 95 cm (37 $\frac{1}{2}$ ")

WEIGHT : 62 kg (136 lbs)


FINISH : American Walnut Grain

Specifications subject to change without notice.

Model "B-40U" produced in USA has different cabinet's style and dimensions from this description or photo.

Special Instructions for British-Standard Model

As the colours of the wires in the mains lead of the apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

IMPORTANT

THE WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

GREEN-AND-YELLOW:	EARTH
BLUE:	NEUTRAL
BROWN:	LIVE

WARNING:

THIS APPARATUS MUST BE EARTHED.

SINCE 1887



YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN